

WHAT IS CLAIMED IS.

1. An infeed apparatus for a sheet material article trimmer, the infeed apparatus comprising:

a pusher element movable relative to a front table of the sheet material article trimmer and configured to move a sheet material article to be trimmed on the front table and into engagement with a backstop of the front table; and

a driver configured to move the pusher element at a same speed as the front table for a period of time with the pusher element in engagement with a first edge portion of the sheet material article and the backstop in engagement with a second edge portion of the sheet material article, the period of time being at least as long as a time required for a front clamp of the sheet material article trimmer to move through a distance corresponding to a difference in thickness between a thinnest sheet material article in a range of thicknesses and a thickest sheet material article in the range of thicknesses so as to grip the sheet material article against the front table.

2. The infeed apparatus as recited in claim 1 wherein the pusher element is further configured to retract from the sheet material article and engage a next succeeding sheet material article to be trimmed.

3. The infeed apparatus as recited in claim 1 wherein the driver includes:

a main cam rotated by a main trimmer drive of the sheet material article trimmer; and

at least one cam follower operatively connected to the pusher element and configured to follow the main cam so as to move the pusher element at the same speed as the front table when the cam follower is in a first arc of the main cam, the cam follower being on the first arc of the main cam for the period of time.

4. The infeed apparatus as recited in claim 4 wherein the main cam includes a

second arc, the at least one cam follower being configured to follow the main cam so as to move the pusher element through a return stroke when the cam follower is in the second arc of the main cam.

5. The infeed apparatus as recited in claim 4 wherein the main cam includes a third arc, the at least one cam follower being configured to follow the main cam so as to move the pusher element through a forward stroke when the cam follower is in the third arc of the main cam.

6. The infeed apparatus as recited in claim 4 wherein the main cam is rotated using a main trimmer drive of the sheet material article trimmer.

7. The infeed apparatus as recited in claim 4 wherein the at least one cam follower includes a first and a second cam follower disposed at opposite sides of the main cam and urged into engagement with the main cam.

8. The infeed apparatus as recited in claim 1 wherein the driver includes a servo motor configured to vary a speed of the pusher element.

9. The infeed apparatus as recited in claim 1 wherein the clamp is configured to grip the sheet material article against the front table for a trimming operation of the sheet material article trimmer.

10. The infeed apparatus as recited in claim 9 wherein the trimming operation is performed using a front knife of the sheet material article trimmer disposed so as to reciprocate with the front table.

11. The infeed apparatus as recited in claim 1 wherein the front table is included in a front trimmer assembly of the sheet material article trimmer.

12. A method for feeding a sheet material article to be trimmed into a sheet material article trimmer, the method comprising:

moving the sheet material article on a front table of the sheet material article trimmer and into engagement with a backstop of the front table using a pusher element; and

moving the pusher element at a same speed as the front table for a period of time with the pusher element in engagement with a first edge portion of the sheet material article and the backstop in engagement with a second edge portion of the sheet material article using a driver, the period of time being at least as long as a time required for a front clamp of the sheet material article trimmer to move through a distance corresponding to a difference in thickness between a thinnest sheet material article in a range of thicknesses and a thickest sheet material article in the range of thicknesses so as to grip the sheet material article against the front table.

13. The method as recited in claim 12 further comprising retracting the pusher element from the sheet material article and using the pusher element to engage a next succeeding sheet material article to be trimmed.

14. The method as recited in claim 12 further comprising providing the driver with:  
a main cam rotated by a main trimmer drive of the sheet material article trimmer; and

at least one cam follower operatively connected to the pusher element and configured to follow the main cam so as to move the pusher element at the same speed as the front table when the cam follower is in a first arc of the main cam, the cam follower being on the first arc of the main cam for the period of time.

15. The method as recited in claim 14 further comprising providing the main cam with a second arc and using the at least one cam follower to follow the main cam so as

to move the pusher element through a return stroke when the cam follower is in the second arc of the main cam.

16. The method as recited in claim 14 further comprising providing the main cam with a third arc and using the at least one cam follower to follow the main cam so as to move the pusher element through a forward stroke when the cam follower is in the third arc of the main cam.

17. The method as recited in claim 14 further comprising providing rotating the main cam using a main trimmer drive of the sheet material article trimmer.

18. The method as recited in claim 12 further comprising providing the driver with a servo motor configured to vary a speed of the pusher element.

19. The method as recited in claim 12 wherein the clamp is configured to grip the sheet material article against the front table for a trimming operation of the sheet material article trimmer.

20. The method as recited in claim 12 wherein the front table is included in a front trimmer assembly of the sheet material article trimmer.